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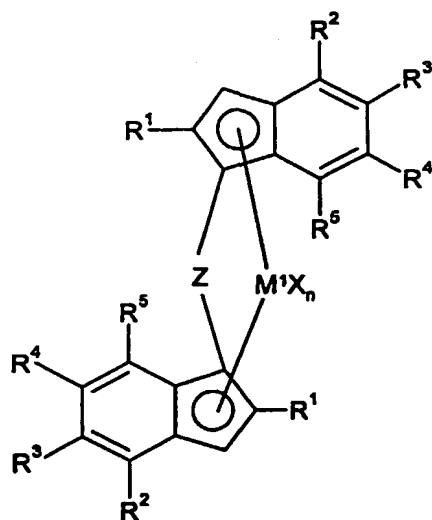
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(54) Title: ORGANOMETALLIC TRANSITION METAL COMPOUND, BISCYCLOPENTADIENYL LIGAND SYSTEM, CAT-
ALYST SYSTEM AND PROCESS FOR PREPARING POLYOLEFINS



(I)

(57) Abstract: The present invention relates to organometallic transition metal compounds of formula (I) where M¹ is an element of group 3, 4, 5 or 6 of the Periodic Table of the Elements or the lanthanides, X are identical or different and are each halogen, hydrogen, C₁-C₂₀-alkyl, C₂-C₂₀-alkenyl, C₆-C₂₂-aryl, alkylaryl or arylalkyl each having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part, -OR⁶ or -NR⁶R⁷, where two radicals X may also be joined to one another, n is a natural number from 1 to 4 which corresponds to the oxidation number of M¹ minus 2, R¹ is hydrogen or a C₁-C₄₀ radical, R² is a substituted or unsubstituted C₆-C₄₀-aryl radical or C₂-C₄₀-heteroaromatic radical containing at least one heteroatom selected from the group consisting of O, N, S and P, R³ is hydrogen or a C₁-C₄₀ radical, or the radicals R² and R³ together form a ring system, R⁴ is hydrogen or a C₁-C₄₀ radical, R⁵ is a C₁-C₄₀ radical, and Z is a divalent group CR⁸R⁹-CR¹⁰R¹¹, where R⁸, R⁹, R¹⁰ and R¹¹ are identical or different and are each hydrogen or a C₁-C₄₀ radical, biscyclopentadienyl ligand systems having such a substitution pattern, catalyst systems comprising

at least one of the organometallic transition metal compounds of the present invention, a process for preparing polyolefins by polymerization or copolymerization of at least one olefin in the presence of one of the catalyst systems of the present invention and the use of the biscyclopentadienyl ligand systems of the present invention for preparing organometallic transition metal compounds.